



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,872	08/04/2003	Tyler A. Lowrey	ITO.0046US (P16201)	5269
21906	7590	09/26/2005	EXAMINER	
TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024				LE, THONG QUOC
ART UNIT		PAPER NUMBER		
				2827

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/633,872	LOWREY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thong Q. Le	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.                  2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-19 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date 5/16/05
- 4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

1. Amendment filed on 07/28/2005 has been entered.
2. Claims 1-19 are presented for examination.

### *Response to Arguments*

3. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4,6,17 are rejected under 35 U.S.C. 102(b) as being anticipated by Katori (U.S. Patent No. 6,426,891).

Regarding claims 1,4,6,17, Katori discloses a method comprising: forming a phase change memory element to be read with a voltage greater than or equal to the threshold voltage of the element (Column 3, lines 1-3). More specifically, Kostyler et al. disclose including forming a phase change memory element including a phase change material between a pair of electrodes (Column 2, lines 1-5).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 4-5, 6-7, 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kostylev et al. (U.S. Patent No. 6,914,801).

Regarding claims 1,6, 17, Kostylev et al. disclose a method comprising: forming a phase change memory element to be read with a voltage greater than or equal to the threshold voltage of the element (Column 4, lines 50-53, Column 10, lines 1-8). More specifically, Kostyler et al. disclose including forming a phase change memory element including a phase change material between a pair of electrodes (Column 9, lines 21-36), and including forming a phase change material with a lower electrode of titanium silicon nitride (Column 8, lines 57-67, Column 9, lines 1-35), and a controller (Column 6, lines 50-56).

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2827

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3,8-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kostylev et al. (U.S. Patent No. 6,914,801).

9. Kostylev et al. as described above, fail to disclose a hold voltage that is at least 80 percent of the threshold voltage of the element, and phase change memory element to have a threshold voltage that does not vary by more than 10 percent with programming currents varying as much as two times. However, Kostylev et al. disclosed a holding voltage and threshold voltage are dependent upon the resistance state of the memory element is used (Column 4, lines 50-67, Column 5, lines 48+).

It would have been an obvious design choice to use a material to make a memory element. Therefore, it would have been obvious to a person of ordinary skill in this art to use material disclosed in Kostylev et al. to obtain the invention as specified in claims 2-3,8-9.

10. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostylev et al., and further in view of Wicker (U.S. Patent No. 6,867,425).

Kostylev et al. as described above, fails to disclose a wireless interface coupled to the processor. However, Wicker discloses a wireless interface coupled to a processor in Figure 16. The wireless interface is used as an optional to control a system. It would have been obvious design choice to use a wireless interface with device of Kostylev et al..

Therefore, it would have been obvious to a person of ordinary skill in this art to use a wireless interface in device of Kostylev et al. to obtain the invention as specified in claims 11-16.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai V. Ho can be reached on 571-272-1777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Thong Q. Le  
Primary Examiner  
Art Unit 2827